

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) An internal combustion engine valve system A valve device, comprising:  
    a cylinder head:  
    a valve guide mounted in said cylinder head. said valve guide having an aperture; and  
    a movable valve element (102, 202, 302, 402, 502, 602, 702) fitted in said valve guide aperture, said movable valve element further comprising at least one artificial muscle element (101, 201, 301, 401, 501, 601, 701) coupled to the valve element (102, 202, 302, 402, 502, 602, 702).
2. (original) The valve device of claim 1, wherein said artificial muscle element (101, 201, 301, 401, 501, 601, 701) is capable of being controlled by an electrical signal.
3. (original) The valve device of claim 1 wherein said artificial muscle element (101, 201, 301, 401, 501, 601, 701) is capable of contracting and expanding.
4. (original) The valve device of claim 1 wherein said artificial muscle element (101, 201, 301, 401, 501, 601, 701) contains polymer gels as active elements.
5. (original) The valve device of claim 1 wherein said artificial muscle element (101, 201, 301, 401, 501, 601, 701) contains carbon nanotubes as active elements.
6. (currently amended) The valve device of claim 1 wherein said valve element is a valve tappet (102, 202, 302, 402) of the an internal combustion engine system and said valve tappet is mounted with displacement movability and said artificial muscle element (101, 201, 301, 401) is coupled directly to said valve tappet.

7. (currently amended) The valve device of claim 1 wherein said valve element is a valve tappet (102, 202, 302, 402) of ~~the~~an internal combustion engine system and said valve tappet is mounted with displacement movability and said artificial muscle element (101-401) is coupled indirectly to said valve tappet.

8. (original) The valve device of claim 7, wherein the valve tappet (302, 402) is coupled to a prestressing element (311, 411) which generates a force in one direction of movement of the valve tappet.

9. (original) The valve device of claim 7, wherein the valve tappet (102) is coupled to a gas pressure chamber (111) such that the action of pressure upon the gas pressure chamber causes a movement of the valve tappet.

10. (original) The valve device of claim 7, wherein the walls of the gas pressure chamber (111) are formed completely or partially by the artificial muscle element (101).

11. (original) The valve device of claim 1, wherein the valve element is designed as a pivotally movably mounted flap (502, 602).

12. (original) The valve device of claim 1, wherein the valve element (702) is comprised of the artificial muscle element (701).

13. (canceled)

14. (currently amended) A method to actuate a valve ~~in an internal combustion engine~~, comprising:

providing an electrical signal to said valve, said valve having a movable valve element comprising at least one artificial muscle element coupled thereto wherein said valve is disposed in a cylinder head of an internal combustion engine.

15. (new) The method of claim 14 wherein said cylinder has a valve guide mounted therein, said valve guide having an aperture through which said valve element is mounted.

16. (new) The method of claim 14 wherein said valve element translates in response to said electrical signal.

17. (new) The method of claim 14 wherein said artificial muscle element is capable of contracting and expanding.

18. (new) The method of claim 14 wherein said artificial muscle element comprises polymer gels as active elements.

19. (new) The method of claim 14 wherein said artificial muscle element comprises carbon nanotubes as active elements.